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PATENT APPLICATION

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In re the Application of

Jean-Louis GUERET

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For: AN APPLICATOR INCLUDING AN APPLICATOR ELEMENT FOR APPLYING A
SUBSTANCE IN PARTICULAR A COSMETIC OR ANOTHER CARE PRODUCT

SUBMISSION OF TRANSLATION OF PROVISIONAL APPLICATION

Commissioner for Patents
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Sir:

In accordance with 37 CFR 1.78 (a)(5), attached is a translation of Provisional Application No. 60/461,806 filed on April 11, 2003. Upon information and belief, the translation is an accurate English translation of the provisional application as filed.

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Attached:
Translation of Provisional Application

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AN APPLICATOR INCLUDING AN APPLICATOR ELEMENT FOR
APPLYING A SUBSTANCE, IN PARTICULAR A COSMETIC AND/OR A
CARE PRODUCT

5 The present invention relates to an applicator
including an applicator element for applying a substance,
in particular a fluid, cosmetic, and/or care product.

Numerous "capillary" applicators are known, in
particular from FR 2 730 704 or EP 1 195 103 A1.

10 FR 2 730 704 describes an applicator provided with
at least one slot at the end of a stem. Such an
applicator cannot retain much substance. FR 2 730 704
also describes an applicator that can hold more
substance, presenting an annular cylindrical space
communicating with a slot present at the end of the stem.
15 Such an applicator is unsuitable for certain uses in
which it is desirable for the slot to be disposed
otherwise, whether for ergonomic reasons or because of
the nature of the region to be treated.

20 The invention seeks to propose a novel applicator in
which the substance is held by capillarity, which is easy
to load with substance, and which can be provided in a
variety of forms appropriate to applying substance to
regions as diverse as the eyelashes, the skin, the lips,
or the fingernails.

25 The invention thus provides an applicator comprising
an applicator element and being characterizable by the
fact that said applicator element comprises:

- at least two walls forming between them a cavity
suitable for retaining the substance;
- 30 · at least one slot extending along a longitudinal
axis and through which the substance contained in said
cavity can be dispensed in order to be applied; and
- at least one opening whereby the cavity opens to
the outside, said opening possessing at least one portion
35 of width in a plane extending transversely to the slot
that is greater than the width of the slot in the same
plane.

Because of the wider opening of the slot, the cavity can be loaded with substance, where appropriate, via said opening in a manner that is relatively easy. The applicator may present considerable endurance between
5 refills because of the reserve of substance that can be retained in the cavity.

The shape of the walls may easily be modified without impeding provision of the slot or the opening, thus enabling the applicator to be provided in multiple
10 variants adapted to treating specific regions of the body or the face.

The slot is preferably entirely separate from the opening and situated substantially opposite therefrom.

The applicator may be made in such a manner as to
15 deliver the substance in the form of a uniform film of substantially constant thickness, with instant wetting of the treated surface, or with instant saturation of said surface when application is performed on keratinous fibers.

20 The applicator may also enable the substance to be applied without subjecting it to high levels of mechanical stress that might lead to a change in its rheological properties, and in particular its consistency, for example. This can make it possible to
25 apply substances where conventional applicators such as brushes are not entirely satisfactory.

The width of the slot and its shape may be selected as a function of the nature of the substance and the flow rate desired during application.

30 The applicator of the invention may enable substance to be applied regardless of the position of the applicator relative to the surface on which the substance is to be applied, since the substance is held in the slot by capillarity.

35 The applicator may be arranged to apply a cosmetic and/or a care product, in particular for makeup purposes,

on the skin or on keratinous surfaces such as the nails, the hair, the eyelashes, or the eyebrows.

The slot is preferably situated between the two walls, which may be elongate in shape with a longitudinal axis substantially parallel to the axis of the slot.

In cross-section, the walls may define a shape that is substantially V-shaped, C-shaped, U-shaped, or W-shaped, for example, with at least one slot opening out in the bottom of a concave portion of the V-, C-, U-, or W-shape, as the case may be.

When the cross-section of the walls is generally U-shaped, the slot may be formed between two substantially parallel rims meeting at the bottom of the U-shape. These rims may project outwards or they may be re-entrant.

In an embodiment of the invention, the applicator element presents only one slot. In a variant, the applicator element presents at least two slots, which may be substantially parallel. When the applicator element presents a W-shaped cross-section, the two slots may open out in the bottoms of the two concave portions of the W-shape. When the cross-section of the two walls defines a U-shape or a V-shape, the two slots may open out on opposite sides of the bottom of the concave portion of the U- or V-shape.

The slot may be substantially rectilinear, or in a variant it may be curved. In particular, the slot may describe a portion of a circle or of an ellipse. Thus, the slot may present a shape adapted to the shape of the surface on which the substance is to be applied, for example being concave so as to fit over the bulging surface of a nail. In a variant, the slot may be convex or it may extend along an undulating curve.

The slot or the opening may present a width that is substantially constant over its entire length, or in a variant it may present a width that is not constant over

its length, in particular because of variations in the spacing between the walls.

The slot may present edges that are linear in shape, or in a variant it may present edges that are serrated, in particular for applying substance on the eyelashes or the eyebrows. These serrated edges may define two rows of teeth, in particular two parallel rows. The respective teeth of the rows may be in register with one another or they may be in a staggered configuration in order to grip eyelashes more firmly.

Specifically when the edges of the slot carry teeth, the substance may be applied on the eyelashes without genuine direct contact between an eyelash and the applicator element, an eyelash making contact only with the substance. This can make it easier to coat the eyelashes in substance and confer a feeling of softness during application.

In an embodiment of the invention, the slot or the opening is uninterrupted along its entire length. In a variant, the slot or the opening is interrupted, in particular by the presence of at least one bridge of material interconnecting the two walls. The term "slot" as used in the present invention thus covers a succession of orifices disposed along an axis.

When the applicator includes a stem connecting the applicator element to a handle element, the slot may extend substantially parallel to the longitudinal direction of the stem. In a variant, the slot does not extend parallel to the longitudinal direction of the stem, for example it may be perpendicular to said direction.

The applicator element may be flocked at least in part, thus making it possible, for example, to retain a greater quantity of substance, particularly if the substance is not very viscous.

The walls may be elastically deformable or they may be made of a rigid material. The applicator element may

be made out of at least one of the following materials: thermoplastic or thermosetting material, elastomer, glass, wood, or metal.

In another of its aspects, the invention also provides a packaging and applicator device for a substance, in particular a cosmetic and/or a care product, the device comprising:

- a receptacle containing a substance for application; and
- an applicator as defined above.

In an embodiment of the invention, the applicator may be removably fastened on the receptacle and it may be arranged to be capable of closing the receptacle in leaktight manner.

The device may include a wiper, which may comprise a block of foam. Other types of wiper may also be used without going beyond the ambit of the present invention, for example a wiper having optionally flocked lips.

The walls of the applicator element serve to protect the substance present in the cavity from being wiped away while the applicator element passes through the wiper.

In a variant, the applicator may be permanently fastened to the receptacle and may include a channel enabling the substance contained in the receptacle to flow into the cavity of the applicator element.

In another of its aspects, the invention also provides the use of an applicator as defined above to apply a substance on a region of the body or the face.

During such use, the applicator element is filled with substance, and then the substance is applied on said region.

For example, the applicator element may be filled with substance by being engaged in a receptacle containing the substance. In which case, the applicator is advantageously wiped on being withdrawn from the receptacle.

In a variant, the applicator element may be filled with substance by a channel putting the cavity of the applicator element into communication with a tank containing the substance.

5 The present invention will be better understood on reading the following detailed description of non-limiting embodiments thereof, and on examining the accompanying drawings, in which:

- 10 · Figure 1 is a diagrammatic and fragmentary perspective view of an applicator constituting an embodiment of the invention;
- Figure 2 is a diagrammatic and fragmentary cross-section view on II-II of the Figure 1 applicator;
- Figure 3 is a view analogous to Figure 2, during
15 application;
- Figures 4 to 12 are diagrammatic and fragmentary cross-section views of variant applicator elements;
- Figures 13 to 19 are diagrammatic and fragmentary perspective views of applicators constituting other
20 embodiments of the invention;
- Figures 20 to 23 are diagrammatic and fragmentary axial section views of other applicator devices in accordance with the invention; and
- Figures 24 to 26 are diagrammatic and fragmentary
25 perspective views of further applicators.

Figure 1 shows an applicator 1 comprising an applicator element 2 connected to one end of a stem 3 of longitudinal axis X.

30 The applicator element 2 comprises two walls 4 of elongate shape having two facing faces that are not mutually parallel. In the example described, these walls extend substantially parallel to the axis X, and in cross-section they define a shape that is substantially V-shaped, as can be seen in Figure 2. The top edges 5 of
35 the walls 4 are joined together at the longitudinal ends of the applicator element 2.

Between them, the walls 4 leave a cavity 6 suitable for retaining a substance P, in particular by capillarity.

At the bottom of the V-shape, the applicator element 2 presents a slot 7 extending practically along the entire length of the walls 4 and serving to dispense the substance contained in the cavity 6.

This slot 7 presents a width that is narrow enough to retain the substance contained in the cavity 6 by capillarity and prevent it from flowing out under the effect of gravity.

The slot 7 enables the substance to be dispensed onto a surface to be treated by capillarity once the applicator element is close enough to said surface for the substance that is retained by the slot to be capable of wetting the surface.

The slot 7 is closed at its longitudinal ends by two respective bridges of material 8 and 9 interconnecting the walls 4.

On its side opposite from the slot 7, the applicator element 2 presents an opening 10 enabling the cavity 6 to be filled with substance. This opening 10 extends substantially along the entire length of the walls 8.

As can be seen in Figure 2, at least in the central region of the applicator element, the opening 10 presents a width ℓ_2 that is greater than the width ℓ_1 of the slot 7, with the widths ℓ_1 and ℓ_2 being measured in a plane perpendicular to the longitudinal axis Y of the slot 7. It can also be seen in the section plane of Figure 2 that the applicator element lies entirely on one side only of the opening 10. For example, ℓ_2 may be greater than or equal to $1.5 \times \ell_1$, or ℓ_2 may be greater than or equal to $3 \times \ell_1$, with ℓ_1 being close to 0.75 millimeters (mm), for example and with ℓ_2 being close to 2 mm, for example.

In the example described, the walls 4 are made of a material that is elastically deformable, e.g. an

elastomer, however they could also be made of a material that is relatively rigid, for example.

In order to apply the substance on a surface S, e.g. on the skin as shown in Figure 3, the user brings the slot 7 of the applicator element 2 close to or into contact with the surface S so that the substance P present between the edges of the slot 7 can wet the surface S and can become deposited thereon.

By moving the applicator element 2 in a direction that is transverse to the axis X, i.e. along arrow F in Figure 3, it is possible to deposit a film of substance P of substantially constant thickness on the treated surface S.

The substance P may optionally be deposited without the applicator element 2 coming into contact with the treated surface S, only the substance present in the slot 7 coming into contact with the treated surface S. This enables substance to be deposited without any risk of the applicator element removing any substance previously deposited thereon as it goes past, and without leaving marks.

However the substance P may also be deposited with the applicator element coming into contact with the surface to be treated.

When the walls 4 are elastically deformable, the slot 7 may deform so as to match the shape of the treated surface.

Thus, when the substance is to be applied to a (finger- or toe-) nail, the slot 7 may deform so as to match the bulging shape of the nail, and enable application to take place uniformly on the nail.

The cross-section defined by the walls 4 may be of a shape other than a V-shape.

Thus, as shown in Figures 4 to 7, the walls 4 may define a U-shaped cross-section, e.g. comprising top portions 4a that are plane and mutually parallel, that

are extended downwardly by bottom portions 4b that converge towards each other.

Figure 4 shows that the slot 7 may be formed between two parallel longitudinal rims 12 connected to the bottom portions 4b of the U-shape, these rims 12 projecting outwards in the example described.

The bottom portions 4b may be inclined to a greater or lesser extent relative to the top portions 4a.

Thus, in the example of Figure 5, the bottom portions 4b slope downwards to a greater extent than the bottom portions in the example of Figure 6.

In the example shown in Figure 7, the walls 4 are not symmetrical to each other about a plane. By way of example, a first wall is plane while the other wall has a top portion 4a that is parallel to the first wall 4, and that is extended by a bottom portion 4b that converges towards the first wall.

The bottom portions 4b need not be directed entirely downwards, and as shown in Figure 8, the bottom portions 4b may be re-entrant, curving up towards the opening 10 so that in cross-section the walls 4 define a shape that is substantially W-shaped. In Figure 8 it can be seen that the slot 7 can thus be set back slightly from the bottom end of the applicator element 2.

The walls 4 may also define a cross-section that is C-shaped, the slot 7 being situated in the bottom of the concave portion of the C-shape, as shown in Figure 9.

In the examples described above, there is only one slot 7.

In a variant, as shown in Figures 10 to 12, the applicator element 2 may present a plurality of slots, and in particular two parallel slots 7.

In the example of Figure 10, the walls 4 are substantially parallel and two slots 7 are defined on either side of an intermediate wall 18 of cross-section in the form of an upside-down V-shape.

In the variant shown in Figure 11, the walls 4 are not parallel but converge towards each other going towards the two slots 7. The slots may be separated by an intermediate wall of a shape that is not necessarily an upside-down V-shape.

Figure 12 shows an applicator element having two slots 7 disposed on either side of an intermediate wall 19 of cross-section in the form of a circular arc with its concave side facing towards the inside of the V-shape.

In the examples described above, the slot(s) 7 extend(s) along an axis Y that is substantially rectilinear and parallel to the axis X.

Figure 13 shows an applicator element 2 for providing satisfactory application on a curved surface such as a nail.

This applicator element 2 may comprise two walls 8 of shape that is curved in such a manner as to define a slot 7 that is outwardly concave, extending along a curved axis Y, e.g. in the form of a portion of a circle or an arc of an ellipse, matching the bulging shape of nails.

In a variant, as shown in Figure 18, the slot 7 may be outwardly convex and the opening 10 may lie in the concave side of the applicator element. This shape for the slot 7 is particularly suitable for application to the eyelashes.

In another variant, the slot 7 may describe an undulating curve, as shown in Figure 19.

The slot 7 may be formed between two linearly-shaped parallel edges 22 as shown in particular in Figures 1 and 13, or in a variant between two rows of teeth 23 as shown in Figure 14.

The applicator element may be made with teeth 23, particularly when it is for applying substance on keratinous fibers, and in particular the eyelashes or the eyebrows.

The teeth 23 in one row may extend in register with the teeth 23 in the other row, or in a variant the teeth may be disposed in a staggered configuration so as to grip the eyelashes more firmly, where appropriate.

5 In the examples described above, the slot 7 is not interrupted.

 In a variant, the slot 7 may be interrupted by at least one bridge of material 25 connecting together the two walls 8 at a point other than at the ends of the slot
10 7, as shown in Figure 15. The slot 21 is thus constituted in the example of this figure by a succession of orifices 26 separated by bridges of material 25.

 Where appropriate, the applicator element 2 may be covered in a coating of flocking 29 as shown in
15 Figure 16, in order to retain more substance and/or in order to enable the substance to be applied or spread using the outside faces of the walls 8.

 In the above examples, the opening 10 formed between the walls 8 is not interrupted between its axial ends.

20 In a variant, as shown in Figure 17, the opening may be interrupted by bridges of material 27 interconnecting the two walls 4, with the opening 10 then being constituted by a succession of orifices 28.

 Figure 20 shows a device 30 of the invention
25 comprising a receptacle 31 containing a substance P and an applicator 32. The applicator comprises an applicator element 2, e.g. as described with reference to Figure 13, and a handle member 35 which also constitutes a closure cap for the receptacle 31.

30 The applicator element 2 is connected to the cap 35 by the stem 3.

 The top portion of the receptacle 31 presents a threaded neck 36 on which the closure cap 35 can be screwed.

35 The applicator element 2 may be filled with substance by being inserted into the receptacle 31.

 The device 30 does not have a wiper.

In a variant, as shown in Figure 21, the receptacle 31 may house a block of foam 40, e.g. of open-celled polyurethane, which acts as a wiper, presenting at least one slot 41 that is substantially closed at rest when the applicator is absent.

The walls 8 of the applicator element 2 enable the supply of substance contained in the cavity 6 to be protected while the applicator element is passing through the wiper.

The receptacle can be provided with a wiper other than a block of foam.

By way of example, Figure 22 shows a device 50 comprising a receptacle 51 containing a substance P for application.

The receptacle 51 presents a neck 52 with an outside thread and provided with a wiper 53, e.g. made of elastomer.

The wiper 53 may present a wall 54 that is substantially circularly cylindrical in shape, extending from a top end with an outwardly-directed flange 55 resting against the top edge of the neck 52, and a bottom end with a transverse wall 56 that is pierced by a central orifice 57 of diameter that is slightly greater than the diameter of the stem 3.

The receptacle 51 may be closed by a closure cap 60 comprising a cover 61 having fastened therein an insert 62 that receives the stem 3.

It would not go beyond the ambit of the present invention for the applicator element to be secured to the receptacle during application.

By way of illustration, Figure 23 shows a device 70 comprising a receptacle 71 having an applicator element 2 fastened thereto.

The applicator element 2 may be fastened to the receptacle in numerous ways, and in particular by snap-fastening. The receptacle 71 may present a neck 72 at one end, for example, the neck being provided with an

annular bead 73 enabling an endpiece 75 to be fitted thereto for carrying the applicator element 2.

The applicator element 2 includes a channel 77 opening out at one end to the inside of the receptacle 71 and at its other end into the cavity 6.

It would not go beyond the ambit of the present invention for the slot 7 of the applicator element to extend in a direction that is not parallel to the longitudinal direction of the stem.

Figure 24 shows an applicator element 2 in which the axis Y of the slot 7 is perpendicular to the axis X of the stem 3.

In the example of Figure 24, the slot 7 is substantially rectilinear in shape.

In a variant, as shown in Figure 25, the applicator element 2 may present a slot 7 of shape that is outwardly concave, so as to be capable of matching a bulging surface, e.g. the surface of a nail, while application is taking place.

In another variant, as shown in Figure 26, the slot 7 may be of a shape that is outwardly convex.

Naturally, the invention is not limited to the embodiments described above, and the characteristics of the various embodiments may be combined with one another. For example, it is possible to provide the edges of the slots of the applicator elements shown in Figures 24 or 25 with teeth or with a coating of flocking.

Throughout the description, including in the claims, the term "comprising a" should be understood as being synonymous with "comprising at least one" unless specified to the contrary.